

REMARKS

This is a full and timely response to the Office Action of October 13, 2006.

Reconsideration and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this Response, claims 10-25 are pending in this application. Claims 10, 15, and 19 have been amended. Claims 1-9 are canceled. The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims. Applicants believe that no new matter has been added by the amendments and that a new search is not necessary.

CLAIMS

Claim 10

Claim 10 is rejected under 35 U.S.C. § 102 as purportedly being anticipated by Sato (U.S. Patent 5,594,480) as discussed in the Office Action. Claim 10 reads as follows:

A printhead, comprising:
a laser system operative to emit laser energy; and
a page-wide array comprising a plurality of areas, wherein each area includes
a heating layer including
an electric heating layer and
a photon absorbing layer,
each electronic heating layer of a particular area overlaps the electronic heating layer of an adjacent area and
a plurality of nozzle systems, wherein each nozzle system includes:
an orifice,
a fluid chamber including a fluid, and
the photon absorbing layer,
wherein a portion of the electric heating layer is adjacent the fluid chamber
and is operative to heat the fluid in the fluid chamber to a lower threshold
temperature, and
the photon absorbing layer is adjacent the fluid chamber and is operative to absorb laser energy emitted from the laser and heat the fluid in the fluid chamber from the lower threshold temperature to an upper threshold temperature which causes a volume of fluid to be ejected from the page-wide array.

(Emphasis added). Applicants traverse each of the 102 rejections in the Office Action and submit that the rejection of claim 10 under 35 U.S.C. §102 by Sato should be withdrawn because Sato does not teach, disclose, or suggest each and every feature of claim 10 above. In particular, Sato does not teach, disclose, or suggest “each electronic heating layer of a particular area overlaps the electronic heating layer of an adjacent area” as recited in claim 10. The Office Action states that Sato teaches that each heating layer of a particular area overlaps the heating layer of an adjacent area. However, Sato does not teach the overlapping of electronic heating layers between areas as recited in claim 10. In particular, the heating layers of Sato are for a particular nozzle. In contrast, the overlap of the electronic heating layers as recited in claim 10 include a plurality of nozzles and the purpose of such overlap is to create a thermal wave across the page-wide array as discussed in detail in the specification. Sato does not teach the features recited in claim 10.

In addition, Sato does not teach, disclose, or suggest “a fluid chamber including a fluid...which causes a volume of fluid to be ejected from the page-wide array” as recited in claim 10. Sato teaches the liquefying a powder to move the ink to an area where the liquefied powder is vaporized and disposed on paper. In contrast, claim 10 recites that a fluid is ejected out of the page-wide array as opposed to liquefying a powder and then vaporizing the liquid powder. Claim 10 does not recite using a powder, liquefying the powder, or vaporizing the liquid powder.

Therefore, the rejection of claim 10 should be withdrawn for at least the reasons stated above, and claim 10 should be allowed.

Claims 11-14

Applicants traverse all of the 102 rejections in the Office Action. Applicants respectfully submit that pending dependent claims 11-14 include every feature of independent

claim 10 and that the cited references fail to teach, disclose, or suggest at least the features of claim 10. Thus, pending dependent claims 11-14 are also allowable over the prior art of record. In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Notwithstanding the arguments made above, the cited references do not teach “wherein a fluid ejection system is operative to control the activation of the electric heating layers in a sequential manner from the first end of the page-wide array to the second end of the page-wide array, wherein the fluid ejection system is operative to control the scan rate of the laser system from the first end of the page-wide array to the second end of the page-wide array, wherein the page-wide array printing system synchronizes the activation of the electric heating layers and the scan rate of the laser system from the first end to the second end so that the fluid in the fluid chamber of a selected nozzle system is heated to the lower threshold temperature using the electric heating layer prior to the laser emitting laser energy directed to the photon absorbing layer of the selected nozzle systems” as recited in claim 2. Therefore, the rejection of claim 2 should be withdrawn.

Claim 15

Claim 15 is rejected under 35 U.S.C. § 102 as purportedly being anticipated by Sato (U.S. Patent 5,594,480) as discussed in the Office Action. Claim 15 reads as follows:

A printhead comprising:

a fluid chamber including a fluid;

a nozzle in fluid communication with the fluid chamber to allow the fluid to be ejected from the fluid chamber;

means, responsive to an electric current, for heating the fluid in the fluid chamber to a first threshold; and

means, responsive to optical energy, for heating the fluid in the fluid chamber to a second threshold sufficient to eject fluid from the fluid chamber.

(Emphasis added). Applicants traverse each of the 102 rejections in the Office Action and submit that the rejection of claim 15 under 35 U.S.C. §102 by Sato should be withdrawn

because Sato does not teach, disclose, or suggest each and every feature of claim 15 above. In particular, Sato does not teach, disclose, or suggest “a fluid chamber including a fluid... means, responsive to optical energy, for heating the fluid in the fluid chamber to a second threshold sufficient to eject fluid from the fluid chamber” as recited in claim 15. Sato teaches the liquefying a powder to move the ink to an area where the liquefied powder is vaporized and disposed on paper. In contrast, claim 15 recites that a fluid is ejected out of the fluid chamber as opposed to liquefying a powder and then vaporizing the liquid powder. Claim 15 does not recite using a powder, liquefying the powder, or vaporizing the liquid powder. Therefore, the rejection of claim 15 should be withdrawn for at least the reasons stated above, and claim 15 should be allowed.

Claims 16-18

Applicants traverse all of the 102 rejections in the Office Action. Applicants respectfully submit that pending dependent claims 16-18 include every feature of independent claim 15 and that the cited references fail to teach, disclose, or suggest at least the features of claim 15. Thus, pending dependent claims 16-18 are also allowable over the prior art of record. In re Fine.

Claim 19

Claim 19 is rejected under 35 U.S.C. § 102 as purportedly being anticipated by Sato (U.S. Patent 5,594,480) as discussed in the Office Action. Claim 19 reads as follows:

A printhead comprising:

a plurality of fluid chambers, wherein each fluid chamber includes a fluid;

a plurality of nozzles, each associated with at least one of the plurality of fluid chambers;

a plurality of resistors, each coupled to receive electric current and corresponding to one of the plurality of fluid chambers; and

a plurality photon absorbing layers that generate heat in response to optical energy, each photon absorbing layer being coupled to the fluid chambers to eject the fluid from the fluid chambers.

(Emphasis added). Applicants traverse each of the 102 rejections in the Office Action and submit that the rejection of claim 19 under 35 U.S.C. §102 by Sato should be withdrawn because Sato does not teach, disclose, or suggest each and every feature of claim 19 above. In particular, Sato does not teach, disclose, or suggest “a plurality of fluid chambers, wherein each fluid chamber includes a fluid ... a plurality photon absorbing layers that generate heat in response to optical energy, each photon absorbing layer being coupled to the fluid chambers to eject the fluid from the fluid chambers” as recited in claim 19. Sato teaches the liquefying a powder to move the ink to an area where the liquefied powder is vaporized and disposed on paper. In contrast, claim 19 recites that a fluid is ejected out of the fluid chamber as opposed to liquefying a powder and then vaporizing the liquid powder. Claim 19 does not recite using a powder, liquefying the powder, or vaporizing the liquid powder. Therefore, the rejection of claim 19 should be withdrawn for at least the reasons stated above, and claim 19 should be allowed.

Claims 20-25

Applicants traverse all of the 102 rejections in the Office Action. Applicants respectfully submit that pending dependent claims 20-25 include every feature of independent claim 19 and that the cited references fail to teach, disclose, or suggest at least the features of

claim 19. Thus, pending dependent claims 20-25 are also allowable over the prior art of record.

In re Fine.

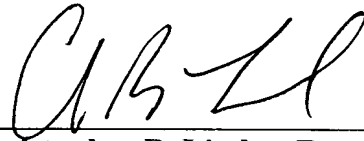
Conclusion

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

In addition, any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'CBL', is written over a horizontal line.

Christopher B. Linder, Reg. No. 47,751



CERTIFICATE OF MAILING

I hereby certify that the below listed items are being deposited with the U.S. Postal Service as first class mail in an envelope addressed to:

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

on 1/9/07

Sara Rogers
Sara A. Rogers

In Re Application of:

Howard

Serial No.: 10/822,956

Filed: 04/13/2004

For: Fluid Ejection Devices and Operation Thereof

Confirmation No.: 3610

Group Art Unit: 2853

Examiner: MRUK, Geoffrey S.

Docket No.: HP:10960936-1
(050834-1060)

The following is a list of documents enclosed:

Return Postcard
Amendment
Amendment Transmittal Sheet